individual reducing agent, inasmuch as one deducts from iron oxide the entire quantity of oxygen necessary for its oxidation, and to this adds just as much, but no more, iron oxide than is necessary to cover the iron protoxide content of the slag simultaneously produced which is given rise to by the reducing agent in question. By this mode one finds the oxide required :

1. For the Silicon.

One per cent. Si gives rise to 10'23 per cent, final slag (according to formula (42)) with 10 per cent, or 1*023 per cent. Fe. Should this iron be taken from iron peroxide, there must bo

, . . , , ., , . ., Fe2 112

present in one weight unit of iron peroxide, ~— ==. • -

1*028 = 0'7 weight units of iron, and — — = 1*46 per cent, FeaOy

be employed.

Iron is present in the final slag in the form of iron protoxide, and according to the formula there are necessary for the reduction of 1"46 weight units of Fe20

28 to FeO, l*46XT77g=0-25 weight units of Si, so that from

1 per cent. Si there now only remain behind 0*75 per cent. Si, the oxygen demand of which from Fe20g under complete using up of the oxygen content of the latter can be covered according to the formula

2Fe203+3Si=3Si02+4Fe.

Hence one finds the iron peroxide requirement for 0'75 per cent. Si as being

°'75 X Q\xOO=2'86

o X ^o

The demand of iron peroxide for the complete elimination of 1 per cent. Si is therefore l*46+2'86=4*32 per cent . . . (67).

The change which the weight of metal must now undergo owing to the elimination of silicon is, since there is produced from 2*86 per cent. Fe20a an amount of 2*86 X 0*7=2-00